

# Navy Personnel Research and Development Center

San Diego, California 92152-7250

AP-96-4 April 1996



## Command History Calendar Year 1995

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April 1996

**Command History  
Calendar Year 1995**

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Navy Personnel Research and Development Center  
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## **Introduction**

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The Navy Personnel Research and Development Center (NAVPERSRANDCEN) Command History for CY95 is submitted per OPNAVINST 5750.12. The history provides a permanent record of CY95 activities.

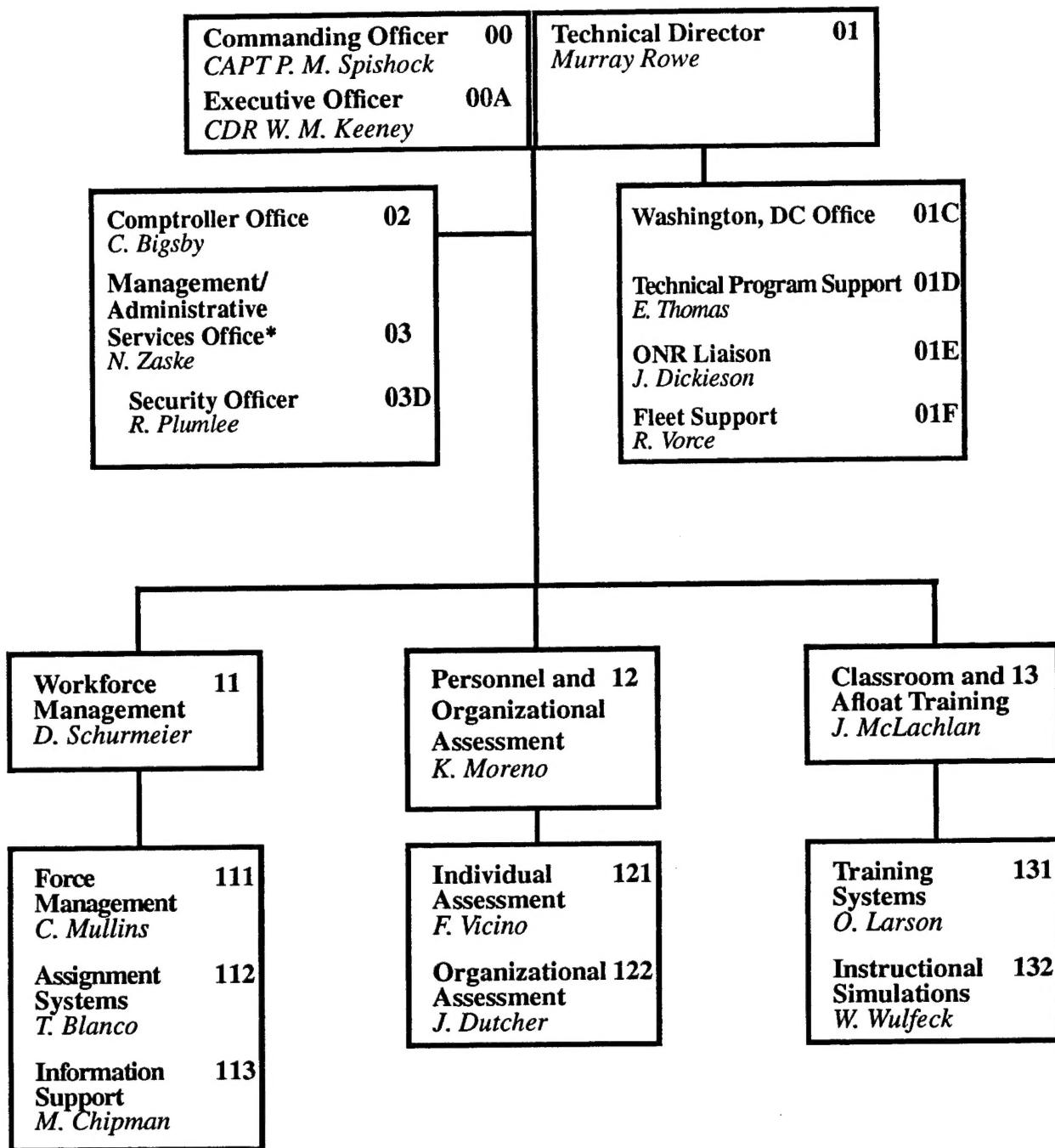
### **Operating Philosophy**

NAVPERSRANDCEN is an applied research center, contributing to the personnel readiness of the Navy and Marine Corps. The Center develops better ways to attract qualified people to the naval services to: select the best, assign them where they are most needed, train each one effectively and efficiently, and manage our personnel resources optimally. By combining a deep understanding of operational requirements with first-rate scientific and technical abilities, the Center is unique in being able to develop new, useful knowledge and refine technology to address people-related issues. This dual expertise permits the Center to develop the technology base for improving the use of human resources within Navy systems and to apply state-of-the-art technology to solve emerging problems. The organizational structure of NAVPERSRANDCEN is represented in Figure 1. As a corporate asset, NAVPERSRANDCEN is responsive to the needs of manpower, personnel, and training managers in the Navy, Marine Corps, and Department of Defense (DOD); to the operating forces; and to the shore establishment that trains and supports the fleet.

The research and development (R&D) methods used by NAVPERSRANDCEN are derived from behavioral, cognitive, economic, and social sciences, as well as from applied mathematics, statistics and computer science. The application of these methods results in tangible products of use to the Navy and Marine Corps. NAVPERSRANDCEN constantly searches for technological opportunities to improve personnel readiness and to reduce manpower costs. We are accountable to the Chief of Naval Personnel (CHNAVPERS), our sponsors, and our users for high productivity, strict ethics, honesty, integrity, professionalism, and perspective. The Center's reporting relationship is depicted in Figure 2.

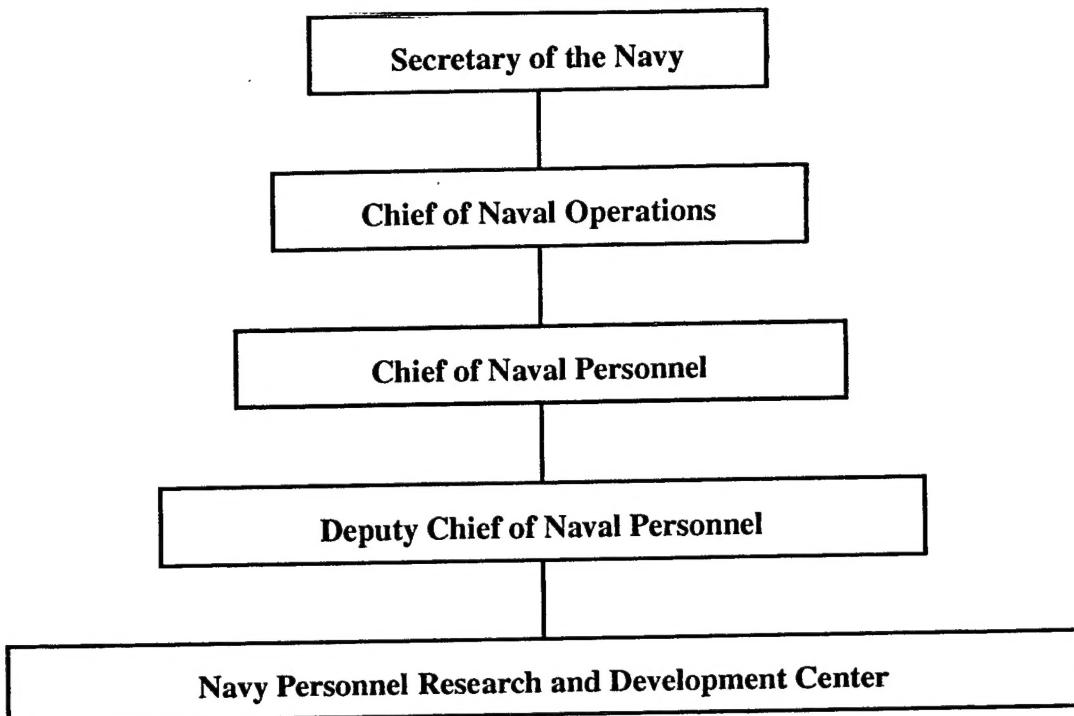
As part of its operating philosophy, NAVPERSRANDCEN seeks to do as much of its work as possible in operational settings where the final products of our efforts are intended to be used. This helps to ensure that the needs and requirements of the users are met and that the users themselves become familiar with the operational capabilities of the particular products. In some cases, because of the close researcher and user interaction, interim or prototype products have been put into use before the final product has been completed.

Further interactions with operational commands involve a variety of manpower, personnel, and training (MPT) databases that NAVPERSRANDCEN has developed and maintained. Because NAVPERSRANDCEN is an in-house, corporate laboratory, these databases are readily available to support many different operational users and requirements.



\*Human Resources and EEO functions are provided by NASNI.

**Figure 1. NAVPERSRANDCEN organization.**



**Figure 2. 1995 reporting relationships (Department of the Navy Research, Development, Test, and Evaluation Organization).**

### **Commanding Officer's Biography**

**Captain Patricia M. Spishock** is a New Jersey native and 1970 graduate of Douglass College of Rutgers University. She was commissioned at Women Officer's School in Newport, RI in 1973. Her first assignment was Training Officer, Naval Training Center, Bainbridge, MD. Following this tour, she was assigned to Naval Facility, Bermuda, where she was an Oceanographic System Watch Officer and then Administrative Officer.

In 1976, Captain Spishock was transferred to San Diego as a staff officer and analyst at Naval Ocean Systems Center working in Antisubmarine Warfare Systems; and then she was assigned as a staff officer at Navy Personnel Research and Development Center working on personnel and training research. During that time, she obtained a Master of Science Degree in Systems Management with an emphasis in research and development from the University of Southern California.

Captain Spishock's first Washington, DC tour was with the Chief of Naval Operations (OP-13) as an analyst of enlisted accession programs, including the Navy's recruiting and advertising budget. From there, she again moved west to serve as Executive Officer, Navy Recruiting District, Seattle, Washington. Upon completion of her XO tour, she returned to Washington, DC to become a detailer for General Unrestricted Line (now Fleet Support) Officer Community.

In 1990, CAPT Spishock assumed command of Naval Technical Training Center, Treasure Island, a training facility supporting primarily the damage control and underway replenishment missions of the surface fleet. Upon completion of this tour, she was assigned as the Assistant Chief of Staff for Base Operations, Naval Training Center (NTC), San Diego. CAPT Spishock assumed command as the last Commanding Officer of Recruit Training Command (RTC), San Diego in October 1993 and returned to her duties at NTC upon its disestablishment in March 1994. In October of 1994, Captain Spishock returned as Commanding Officer for a second tour at Navy Personnel Research and Development Center.

CAPT Spishock is a subspecialist in three areas: Manpower, Personnel, and Training Analysis; Operations Analysis; and Education and Training Management. She has been awarded the Legion of Merit, Meritorious Service Medal, the Navy Commendation Medal (3 awards), Meritorious Unit Commendation with bronze star, the National Defense Service Medal with bronze star, the Overseas Service Ribbon, and the Navy Recruiting Ribbon.

#### **Technical Director's Biography**

**Mr. Murray W. Rowe** is the Technical Director of the Navy Personnel Research and Development Center. He came to NAVPERSRANDCEN as a research economist in 1976. From 1978 to 1989, Mr. Rowe headed the Center's Force Management Division. In 1989, he became the Director of the Manpower Systems Research Department. In 1988-89, Mr. Rowe served a six month tour as Science Advisor to the Chief of Naval Personnel, ADM J. M. Boorda.

Mr. Rowe has extensive research experience in personnel force management modeling and information system development for customers in Bureau of Naval Personnel; the Navy Recruiting Command; Headquarters, U.S. Marine Corps; and the Office of the Secretary of Defense.

Mr. Rowe received his Bachelor of Arts Degree in economics and mathematics from the University of Kentucky in 1973 and a Master of Arts Degree in economics from the University of Maryland in 1975. He was elected to Phi Beta Kappa in 1972. In 1991, Mr. Rowe was awarded the Navy Civilian Meritorious Service Medal.

Mr. Rowe and his wife, Lee, have two sons.

## **Historical Chronology**

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- 1 July 1951      The Naval Personnel Research Unit, San Diego, CA was established under the Bureau of Naval Personnel (BUPERS) to provide a personnel research facility close to the operating forces.
- 1 July 1952      The U.S. Naval Personnel Research Field Activity was established in Washington, DC to provide an activity close to Navy users and systems.
- 26 May 1961      SECNAV Notice 5450 redesignated the two field activities as U.S. Naval Personnel Research Activities.
- 10 December 1968    OPNAV Notice 5450 redesignated the Naval Personnel Research Activity, Washington, DC as the Naval Personnel Research and Development Laboratory due to increased emphasis on R&D.
- 1 August 1969      The Chief of Naval Operations (CNO) redesignated the Naval Personnel Research Activity, San Diego, CA, as the Naval Personnel and Training Research Laboratory.
- 1 May 1973      The Secretary of the Navy approved the establishment of NAVPERSRANDCEN, San Diego, CA to provide a corporate personnel laboratory with an in-depth capability in the behavioral and management sciences. This action consolidated those research functions assigned to the Naval Personnel Research and Development Laboratory, the Naval Personnel and Training Research Laboratory, and the Personnel Research Division of BUPERS.
- 17 May 1975      OPNAV Notice 5450 changed command and support responsibility for NAVPERSRANDCEN from the CHNAVPERS to the Chief of Naval Material (CNM).
- 22 May 1980      NAVMATINST 5450.27B modified the mission statement to include technical and consultant support and services to CNO in the design, development, and operation of the Navy personnel system.
- 1 October 1980     The Commanding Officer, NAVPERSRANDCEN, directed to report for additional duty to Deputy CNO (Manpower, Personnel, and Training) (OP-01).
- 6 May 1985      The disestablishment of CNM changed command and support responsibility for NAVPERSRANDCEN from CNM to Chief of Naval Research (CNR).
- 24 February 1986    The Secretary of the Navy changed command and support responsibility for NAVPERSRANDCEN from CNR to Space and Naval Warfare Systems Command (SPAWARSYSCOM).
- 27 March 1988     Management control of NAVPERSRANDCEN was transferred from SPAWARSYSCOM to CNP/Commander, Naval Military Personnel Command (NMPC). NMPC was charged with direct management of NAVPERSRANDCEN.
- 12 September 1991   OPNAV Notice 5450 disestablished NMPC and delegated direct management of NAVPERSRANDCEN to BUPERS.

- 25 September 1991      OPNAV Notice 5450 modified NAVPERSRANDCEN's mission to conduct research and development to improve the performance of individuals, teams, and organizations within the Navy and Marine Corps; to provide products and services specifically directed at improving Department of the Navy personnel planning, testing, acquisition, selection, classification, training, utilization, motivation, organization, management, and other contemporary issues; and to perform other functions as directed by higher authority.
- 3 October 1994      NAVPERSRANDCEN reduced a staff of 228 civilian personnel to 154, by implementing a self-imposed Reduction-in-Force.
- 1 October 1995      Recommendations of 1995 Base Realignment and Closure Commission (BRAC-IV) that NAVPERSRANDCEN be disestablished and its functions realigned became law. Per BRAC-IV recommendations, NAVPERSRANDCEN's manpower and personnel research missions will move to Millington, TN, for realignment under the Bureau of Naval Personnel (BUPERS) in FY98. NAVPERSRANDCEN's training research mission will realign under the Naval Air Warfare Center Training Systems Division (NAWCTSD), Orlando, Fl, in FY97.

# **Organization**

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## **Mission**

To conduct research and development to improve the performance of individuals, teams, and organizations within the Navy and Marine Corps. To provide products and services specifically directed at improving Department of the Navy personnel planning, testing, acquisition, selection, classification, training, utilization, motivation, organization, management, and other contemporary issues.

## **Philosophy**

We believe people are the most valuable resource of the Navy and Marine Corps. People have the unique capability to take action based on objectives and values in rapidly changing environments. We believe, therefore, that improving the ability of people to perform their assigned tasks is necessary to maximize the effectiveness of weapon systems. Moreover, we believe our efforts will improve the quality of service life and the effectiveness of MPT, and organizational systems and result in a more effective naval force.

## **Vision**

For the Navy and the Marine Corps, the current decade will begin an era of new missions, changing force structure, and shifting priorities. Each Service will prepare itself to be ready at all times to conduct a large number of varied operations in potentially hostile environments. New capabilities and technologies will be developed to meet the challenges of these new responsibilities and threats. Of critical importance will be the continuing need to attract and retain a professional personnel force of the very brightest and most capable young people in the nation.

Through this period and beyond, we see NAVPERSRANDCEN continuing to grow in leadership and influence as the Navy and the Marine Corps' principal center for MPT and organizational systems R&D. We will be recognized for our innovation, initiative, the teamwork of our people, and our ability to anticipate and effectively respond to change.

Our principal value will continue to be in the products and services we provide. As an integral part of the Navy and Marine Corps family, we are motivated and able to seek out and solve the most important Navy and Marine Corps problems within our mission area. We are committed to developing close working relationships with our sponsors and customers and to meeting their needs in a timely, cost-efficient, and scientifically valid manner.

Our major strength will continue to be our staff whose talents cover a broad range of technical disciplines. We are proud of the research scientists who, along with members of the support staff, contribute so much to enhancing the Center's reputation within the operational and scientific communities. We will build on this strength by developing and expanding the skills of the present staff and hiring new individuals as needed to respond effectively to a wide variety of Navy and Marine Corps problems and opportunities.

As an R&D activity, we will continue to fulfill our responsibility to identify and test the applicability of current and emerging scientific technologies to the solution of Navy and Marine Corps MPT and organization systems problems. We will strive to maintain our recognized expertise in the core technologies associated with manpower modeling; ability, interest, and attitude measurement; instructional design; organizational evaluation; and quality management. At the same time, we will develop new technologies in these areas.

In pursuing this vision, we will strive for continuous improvement in the quality of our internal operations and in the products and services we provide. We will establish meaningful, measurable goals and procedures for assessing progress in attaining them. We will recognize and reward the contributions of our staff. We will remain open to change and flexible in setting future directions and strategies. We are confident that these actions, in total, will assure our continued role in helping to build a stronger and more effective Navy and Marine Corps.

## **Goals**

1. Design and develop MPT and organizational systems products and services that significantly enhance the ability of the Navy and Marine Corps to carry out their missions.
2. Attract, develop, and retain talented and motivated personnel through Center policies and practices that foster and reward proactive behavior, teamwork, communication, trust, risk taking, and innovation.
3. Conduct a technology base program (i.e., basic research, exploratory development, and advanced technology demonstrations) to meet Navy and Marine Corps personnel and operational requirements and to maintain scientific and technical leadership in MPT and organizational systems areas.
4. Maintain in-house scientific expertise and corporate knowledge to ensure technological innovation, "smart buyer" assistance, and real-world understanding of MPT and organizational systems requirements.
5. Anticipate future needs of NAVPERSRANDCEN sponsors and customers and meet them through use of appropriate technology, prioritization of R&D requirements, and by facilitating transitions of products into operational use.
6. Seek continuous improvement in the quality of NAVPERSRANDCEN products and services, and the way they are applied to naval systems.

## **Functions**

1. Plans and develops effective manpower, personnel, and training (MPT) products and services for Navy and Marine Corps operational application. Provides technical assistance to support the transition and implementation of Center products.

2. Develops and maintains in-house Navy and Marine Corps scientific and technical expertise to provide corporate knowledge, corporate memory, technological innovations, "smart buyer" assistance, and real-world understanding necessary for the development and support of Navy and Marine Corps MPT.
3. Plans and conducts an effective technology base program (basic research, exploratory development, and advanced technology development) to meet existing and projected operational requirements and to maintain scientific and technical leadership in MPT areas.
4. Develops new systems and methods for determining manpower requirements, allocating manpower resources, developing personnel inventories, and distributing and assigning those inventories to improve military readiness and control costs.
5. Develops large-scale systems for managing the flow of Navy enlisted personnel (accessions, retention, promotions) to attain desired skill inventories within constraints of cost and feasibility.
6. Develops systems for constructing and executing the Navy's manpower appropriation.
7. Designs systems for optimal job-person matches based on cost, fleet requirements, individual preferences, and a wide variety of assignment policies.
8. Develops systems for managing training resources.
9. Develops information resource management technologies (hypermedia, database management systems, user interfaces) to support manpower and personnel decision making. Develops large-scale systems for managing USMC enlisted and Navy officer personnel strength.
10. Develops systems for managing Navy recruiting and substance abuse efforts.
11. Develops new systems and procedures for recruiting, selecting, classifying, and utilizing officer, enlisted, and civilian personnel to improve performance, satisfaction, and retention.
12. Serves as the Chief of Naval Personnel's primary resource to coordinate and conduct personnel surveys in the Navy and to develop new survey methodology for the Navy and Marine Corps.
13. Develops and evaluates personnel testing systems and computerized adaptive testing (CAT) versions of aptitude and classification tests. Serves as Lead Department of Defense research and development (R&D) laboratory for overall management of CAT research, development, implementation, and scientific support of the system.
14. Develops training technologies to enhance personnel readiness.
15. Employs existing and emerging technologies in the development and application of training systems to alleviate Navy and Marine Corps training problems and improve the Navy's operational readiness.

16. Develops and evaluates innovative management and leadership systems for improving the effectiveness and readiness of Navy and Marine Corps personnel and organizations.
17. Develops and evaluates innovative motivation and reward systems for improving the efficiency and effectiveness of Navy and Marine Corps personnel and organizations.
18. Develops and evaluates educational material on innovative management and leadership systems for Navy and Marine Corps personnel and organizations.
19. Develops methods, procedures, and instruments for assessing the effectiveness and efficiency of management and leadership practices in Navy and Marine Corps organizations.
20. Develops, evaluates, and applies innovative personnel assessment technology.
21. Provides independent analyses, technical advice, and consultation to research, development, test, and evaluation (RDT&E) on operational matters related to the Center's mission.
22. Investigates, defines, and addresses operational problems related to fleet personnel performance.
23. Maintains liaison with CNO, ONR, BUPERS, and CNET for the purpose of conducting on-site projects and assisting program sponsors on issues related to MPT management.
24. Develops, installs, and provides life cycle support for information management systems.
25. Provides information and reports to higher authority and the scientific community on the progress and accomplishments of the Center's programs.
26. Provides technical support in the development of the Chief of Naval Personnel's long range plan with regard to the infusion of appropriate technology, definition, and prioritization of RDT&E requirements and the transition of products into operational use.
27. Provides information and technical support to the Center's Bureau of Naval Personnel (BUPERS) Program Manager in all matters related to the Center's operation.
28. Develops and maintains liaison with Navy, Department of Defense, and civilian research development, training, and education organizations for the exchange of information and the establishment of cooperative efforts in MPT.

## Center Resources

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### Funding

NAVPERSRANDCEN operates under the RDT&E Resources Management System. Under this system, the final fiscal responsibility resides with the Commanding Officer and certain financial responsibilities are delegated to cost center managers. The reporting procedures associated with the Resources Management System provide financial information for both internal management and higher authority.

The principal mission sponsor and prime "customer" for Center RDT&E products is BUPERS. Significant sponsorship also comes from the CNR, the Marine Corps, and other Navy and DOD organizations including the Systems Commands. The majority of RDT&E that the Center conducts is supported by directly funded projects. A small portion of the funds are independent research and independent exploratory development. In addition, a substantial portion of research, development, and analysis consists of "reimbursables," specific problem solving efforts requested by, and supported with, funding from other organizations.

NAVPERSRANDCEN's funding at the end of FY95 was \$28.6 million. Distribution, source, and appropriation of funds are shown in Figures 3 and 4.

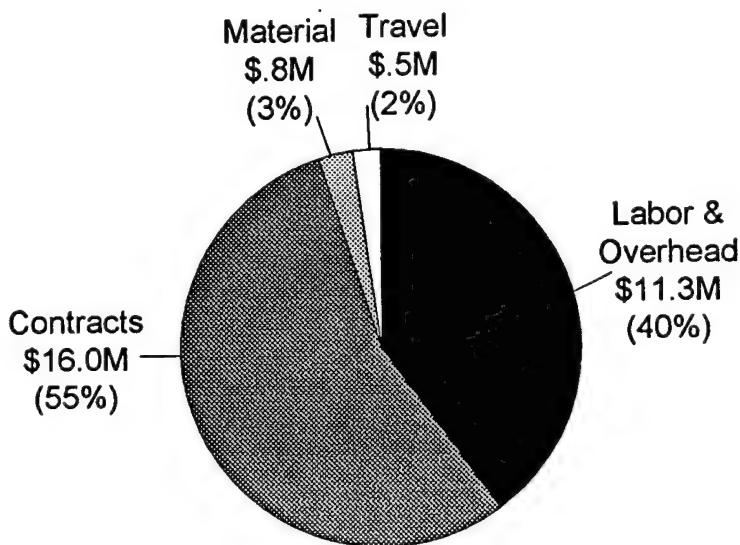
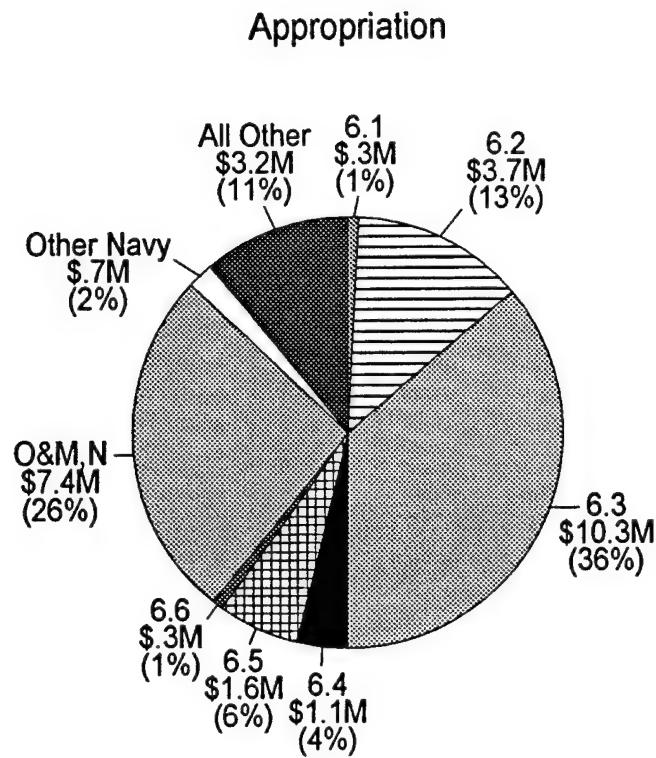
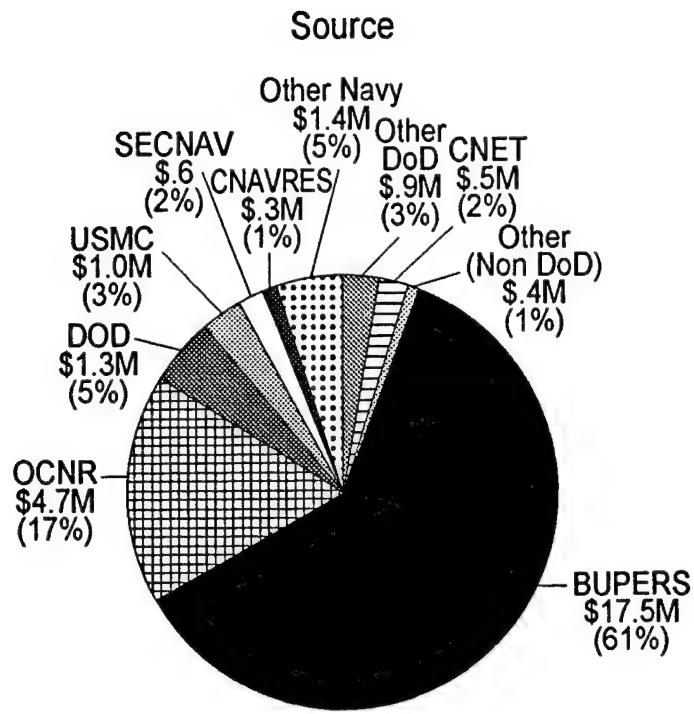


Figure 3. Distribution of funds (\$28.6 M, 30 September 1995).



**Figure 4. Funding by source and appropriation (\$28.6 M, 30 September 1995).**

## **Personnel**

Because R&D programs at NAVPERSRANDCEN are mission-oriented, it is essential that the research force be multidisciplinary so that early consideration may be given to alternative approaches in research endeavors. The Center's staff is creatively diverse and equipped to meet this prerequisite.

As of 30 September 1995, the staff numbered 141 civilian personnel. Of the civilians, 115 are professional and technical personnel representing a variety of disciplines. Of the professional and technical staff, 66% hold advanced degrees. The military staff numbered 19, consisting of line officers and senior enlisted personnel. The military personnel offer extensive fleet and subject-matter expertise that helps ensure the operational relevance of NAVPERSRANDCEN's R&D endeavors. This broad personnel base allows NAVPERSRANDCEN to maintain a highly effective, multidisciplinary team approach to its R&D.

## **Facilities**

NAVPERSRANDCEN is located on Point Loma in San Diego, CA, with support offices in Washington, DC. The Center occupies 13 buildings under a host-tenant arrangement with the Naval Command, Control and Ocean Surveillance Center, Research, Development, Test, and Evaluation Division (NCCOSC RDTE DIV). In addition to office space for research and support personnel, the following research facilities are housed at the Center:

- **Research Computing Facility (RCF)** provides general Unix-based computing services and access to the Defense Data Network for Center research and support staff. The facility provides computational and electronic mail support for research in areas of artificial intelligence, computer-assisted instruction, cognitive science, testing, and training. The RCF equipment suite includes file servers and numerous peripherals.
- **Manpower and Personnel Computing Facility (MAPCOM)** provides general purpose IBM-based computing services for Center researchers and administrative operations. The facility is supported by the Manpower Systems Department. It is specially equipped to serve psychologists, economists, mathematicians, and computer scientists whose research requires the organization and analysis of large data files, the development of large-scale mathematical models, the design of information delivery systems, and general-purpose scientific computing. The MAPCOM features an IBM 4381/92E, multiple tape drives, and over 74G in disk storage.

# **Research and Development Program**

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The R&D program at NAVPERSRANDCEN addresses three functional areas: Workforce Management, Personnel and Organizational Assessment and Classroom and Afloat training. Within these three functional areas are seven product lines, each of which has one or more projects.

## **Workforce Management**

Develops new systems and methods for determining workforce requirements, allocating workforce resources, developing personnel inventories, and distributing and assigning those inventories to improve military readiness and control costs.

- **Force Management**—Develops large-scale systems for managing the flow of Navy enlisted personnel (accessions, retention, promotions) to attain desired skill inventories within constraints of cost and feasibility. Develops systems for constructing and executing the Navy's manpower appropriation.
- **Assignment Systems**—Designs systems for optimal job-person matches based on cost, fleet requirements, individual preferences, and a wide variety of assignment policies. Develops systems for managing training resources.
- **Information Support**—Develops information resource management technologies (hypermedia, database management systems, user interfaces) to support manpower and personnel decision making. Develops large-scale systems for managing USMC enlisted and Navy officer personnel strength. Develops systems for managing Navy recruiting and substance abuse efforts.

## **Personnel and Organizational Assessment**

Develops systems and procedures for recruiting, selecting, classifying, utilizing and managing the training of officer, enlisted and civilian personnel to improve performance and retention. Psychological and sociological technologies are applied to provide solutions to personnel problems. Serves as the CNO primary personnel survey resource to coordinate and conduct attitude surveys in the Navy and Marine Corps and to develop new survey technologies. Conducts research, development, test, and evaluation on DoN organizations. The principal criteria are effectiveness, quality of products and services provided, efficiency, timeliness, and costs.

- **Individual Assessment**—Develops effective and efficient methods for selecting, classifying, and assigning military personnel. Performs development and evaluation of cognitive and non-cognitive measures of individual differences, and of performance-related criterion measures. Performs research to develop comprehensive person-job matching models. Provides operational direction and technical support for all computer-based aptitude testing.
- **Organizational Assessment and Development**—Conducts organizational assessments to determine appropriate changes needed to meet efficiency and effectiveness goals. Designs,

develops, and evaluates interventions and change strategies that evolve from these assessments. Conducts research on methods of management assessment and methods of providing management training. Investigates issues associated with managing a diverse force and develops technologies to enhance performance and improve force readiness. Develops systems to evaluate the effectiveness of quality of life programs and to improve the quality of personnel survey data.

### **Classroom and Afloat Training**

Conducts and RDT&E program to employ existing and emerging technologies in the development and application of training systems to alleviate Navy training problems; increase the effectiveness of this training, while decreasing its costs; and, improve the Navy and Marine Corps operational readiness.

- **Training Systems**—Develops Navy training systems that will best meet the Navy's needs for skilled personnel while enabling officers and enlisted personnel to achieve their personal career goals. Conducts research into the design, delivery, and management of training to ensure maximum readiness of Navy and Marine Corps combat forces. Investigates the technical and operational feasibility of emergent training programs and systems.
- **Instructional Simulations**—Develops advanced instructional technologies for use in training complex conceptual tasks. Conducts research into the design of simulation-based training systems, which incorporate high fidelity models of physical phenomena and sensor systems so as to provide advanced training for expert-level performance.

Other research efforts include developing and testing innovative methods to design, administer, and evaluate management and professional training. In addition, job aids are developed and tested to determine their effects on workload accomplishment.

### **Fleet Liaison Office**

In addition, NAVPERSRANDCEN maintains a Fleet Liaison Office (FLO) to maintain liaison with Fleet Commands, Type Commands, Systems Commands, CNO Agencies, and R&D Centers in matters related to NAVPERSRANDCEN's mission areas, and serves as the Center's focal point for investigating and responding to requests for technical assistance. It monitors, on a continuing basis, operational problems, requirements, and priorities to determine RDT&E implications, provides on-site consultative services to operational commands, and performs special projects as needed and facilitates the implementation of the Center's R&D products. The FLO serves as the Center's agent for the Navy Science Assistance Program and is closely linked to this program's management, training, and quality assurance.

# Award Winning Technical Accomplishments<sup>1</sup>

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## Navy Class Scheduler System

The Navy Class Scheduling System (NCSS), developed by **Ms. Carol Mullins, Dr. Michael Nakada, and Mr. Mark Chipman** produces class convening schedules in 1/50th the time of the previous manual methods. NCSS generates schedules which minimize the maximum number of instructors required during any instruction period while ensuring that no resource constraints are exceeded. In addition, NCSS allows classes which share common resources to be scheduled at the same time to ensure that no two classes are competing for the same resource at the same time. NCSS produces a variety of output in addition to the actual start and graduation dates of each class. For each resource (e.g., classroom), NCSS identifies on a period-by-period basis the number needed and the number that are available. NCSS reports the number of instructors needed to teach all classes in session on a period-by-period basis. NCSS has been installed at Naval Air Technical Training Center (NATTC), Memphis; Service School Command, San Diego, and Great Lakes; Naval Technical Training Center (NTTC), Meridian; COMTRALANT, Norfolk; Naval Construction Training Center, Gulfport; and the Fleet ASW Training Center, San Diego. In addition, NCSS is currently being used by the Coast Guard to schedule initial skill training.

## Quality of Life in the U.S. Marine Corps

In the early 1990s, **Dr. Elyse Kerce** proposed and developed a research agenda to systematically study quality of life (QOL) in the Marine Corps and Navy. Over a 3-year period, Dr. Kerce conducted the Marine Corps QOL research. The project involved the collection of data through a questionnaire administered to a world-wide sample of Marines as well as personnel data gathered from Marine Corps databases. From these data, Dr. Kerce developed a conceptual model of Marine Corps QOL, which portrayed the relationship between QOL domains, global assessments of QOL, and important military outcomes, such as personal readiness, retention, and performance. Dr. Kerce's Technical Report on her work contains ground-breaking information regarding military QOL. It serves as a rich source of information about Marine Corps QOL as well as a significant contribution to scientific research regarding the measurement and prediction of QOL.

## Command Assessment Team Survey System (CATSYS)

The Navy requires all commands to conduct an annual Equal Opportunity (EO) assessment. To implement this requirement, the Navy asked NAVPERSRANDCEN to develop a computer-based

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<sup>1</sup> The Technical Director's award provides individuals and work teams immediate recognition for exemplary technical accomplishment contributing to the Center Mission. As an applied research center, NAVPERSRANDCEN's principal goal is to apply state-of-the-art technology to solve emerging problems affecting Navy and Marine Corps personnel readiness. The attainment of this goal is manifested in tangible products of operational use to Navy and Marine Corps commands. The focus of this special award is on those exemplary technical accomplishments that result in products of significant value to particular user commands.

system that helps commands conduct and interpret their EO surveys. Specifically, the system developed by **Dr. Paul Rosenfeld**, known as CATSYS, assists in the administration, analysis, interpretation, and presentation of a command EO survey. CATSYS standardizes the survey process, provides Commanding Officers with a computer-based system for identifying potential EO problems, and boosts the effectiveness and credibility of the Command Managed Equal Opportunity program.

### **Multidimensional Adaptive Testing (MAT)**

Previous computerized adaptive testing procedures assumed that a test is unidimensional or measures only one ability. This assumption meant that information gained about an individual's aptitude in one area (e.g., science) was not helpful in identifying the individual's aptitude in another, related area (e.g., math). **Dr. Dan Segall**'s work on the Multidimensional Adaptive Testing (MAT) model rejects this assumption and introduces a procedure that will shorten testing times, improve test accuracy, and provide an opportunity to exploit computerized adaptive testing in other multidimensional domains such as personality and training assessments.

### **Job Advertisement and Selection System (JASS)**

Leading a team of Navy lab, telecommunication, and contractor personnel, **Tim Liang** and **Thuvan Nguyen** have developed software that is significantly changing the way sailors search and apply for their next assignment. The Job Advertisement and Selection System (JASS) provides sailors with on-line access to descriptions of job openings and the ability to apply for those billets. JASS is currently operational for the Personnelman (PN) rating and will expand to include a sea-intensive rating soon. Initial trials of JASS revealed that it reduces detailer workload and increases sailors' involvement and satisfaction with selecting their next assignment.

### **Annotation Manager**

**Mr. Larry Bierma, Mr. David Dickason, and Ms. Barbara Morris**, under the technical direction of **Dr. Michael Cowen**, were responsible for the development of the Annotation Manager. This software program allows the inclusion of legacy instructional materials with an array of Interactive Electronic Technical Manuals (IETMs) in electronic classrooms. Newly developed materials are produced and "tagged" using the Standard Graphics Markup Language (SGML). But to redevelop legacy materials using SGML costs upwards of \$4 per page, making the inclusion of these older but valuable materials prohibitive. The Annotation Manager is a windows-based technology, which provides an alternative process for linking instructional materials with modern electronic technical manuals. This development has received extraordinary attention by the Naval Sea System Command because of the demonstrated efficiency of IETMs. The use of the larger base of previously developed materials in this context will cost avoid millions of dollars of redevelopment effort.

### **Navy Drug Screening Program**

The Navy Drug Screening Program (NDSP) is a PC-based Windows software program that will enable commands to streamline administration of random drug testing, increase deterrence of drug use, and improve the efficiency of the drug testing program. Based on drug research work

conducted by **Dr. James Boyle**, **Dr. Jules Borack**, and **Mr. Jim Mosteller** since 1992, NDSP will be offered to every Navy command. NDSP can help all commands in DoD do more with less. It will lower the labor costs for administering a command drug testing program. It can also help a command improve the drug deterrence aspect of a given testing program. Jim Mosteller has been the key individual responsible for beta testing NDSP at seven San Diego sites, designing NDSP functions and Menus, and bringing to market the final product. Pat Boyle and Jules Borack have been instrumental in ensuring that NDSP adheres to its mathematical roots as enhancements and modifications are made based on user feedback.

## **Publications and Presentations<sup>2</sup>**

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### **Professional Publications Award**

Publications recognized for significant contributions to the scientific and technical literature during 1995:

Hetter, R. D., Segall, D. O., & Bloxom, B. M. (1994). A comparison of item calibration media in computerized adaptive testing. *Applied Psychological Measurement*, 18(3), 197-204.

Larson, G. E., & Wolfe, J. H. (1995). Validity results for g from an expanded test base. *Intelligence*, 20(1), 15-25.

Semb, G. B. & Ellis, J. A. (1994). Knowledge taught in school: What is remembered? *Review of Educational Research*, 64, 253-286.

### **Technical Reports**

Baker, M. S. (1995). *Study to Assess Training and Doctrine Command (TRADOC) School Staff Time Available for Training Activities* (NPRDC-TR-95-2). San Diego: Navy Personnel Research and Development Center. (AD-A285 590)

Kerce, E. W. (1995). *Quality of Life in the U.S. Marine Corps* (NPRDC-TR-95-4). San Diego: Navy Personnel Research and Development Center.

Nakada, M. K. (1994). Delayed Entry Program (DEP) Attrition: Recruits, Recruiters, Contracts, and Economics (NPRDC-TR-95-2). San Diego: Navy Personnel Research and Development Center. (AD-A288 576)

Simpson, H., Wetzel, C. D., & Pugh, H. L. (1995). *Delivery of Division Officer Navy Leadership Training by Videoteletraining: Initial Concept Test and Evaluation* (NPRDC TR-95-7). San Diego: Navy Personnel Research and Development Center. (AD-A298 102)

Weaver, J. L., Perrin, B. M., Zeltzer, D., & Robinson, E. R. N. (1995). *Damage Control Training in a Virtual Environment* (NPRDC-TR-95-6). San Diego: Navy Personnel Research and Development Center.

Wetzel, C. D., Simpson, H., & Seymour, G. E. (1995). *The Use of Videoteletraining to Deliver Chief and Leading Petty Officer Navy Leadership Training: Evaluation and Summary* (NPRDC TR-95-8). San Diego: Navy Personnel Research and Development Center. (AD-A298 374)

Wilcove, G. L. (1995) *Quality of Life in the Navy, Findings From 1990 to 1992: Navy-wide Personnel Survey. Volume 1: Research Report* (NPRDC-TR-95-1). San Diego: Navy Personnel Research and Development Center. (AD-A285 588)

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<sup>2</sup> Unclassified, public release only.

Thomas, M. D. (1995). *Gender Differences in Conceptualizing Sexual Harassment* (NPRDC-TR-95-5). San Diego: Navy Personnel Research and Development Center. (AD-A290 709)

#### Technical Notes

Booth-Kewley, S. (1995). *Factors Affecting the Reporting of Sexual Harassment in the Navy* (NPRDC-TN-95-9). San Diego: Navy Personnel Research and Development Center. (AD-A299 816)

Boyle, J. P. (1995). *Daily Random Urinalysis Testing: Consequences of Deterrence Functions* (NPRDC-TN-95-4). San Diego: Navy Personnel Research and Development Center. (AD-A294 816)

Kantor, J., Ford, M., Wilcove, G., & Gyll, S. P. (1995). *Navy-wide Personnel Survey (NPS) 1994: Statistical Tables for Enlisted Personnel* (NPRDC-TN-95-1). San Diego: Navy Personnel Research and Development Center. (AD-A298 409)

Kantor, J., Ford, M., Wilcove, G., & Gyll, S. P. (1995). *Navy-wide Personnel Survey (NPS) 1994: Statistical Tables for Officers* (NPRDC-TN-95-2). San Diego: Navy Personnel Research and Development Center. (AD-A298 342)

Morris, B. A., & Dickeson, J. (1995). *Design and Development of the Paperless Classroom* (NPRDC-TN-95-6). San Diego: Navy Personnel Research and Development Center. (AD-A299 129)

Morris, B. (1995). *Evaluation of the Paperless Classroom* (NPRDC-TN-95-7). San Diego: Navy Personnel Research and Development Center. (AD-A299 131)

Morrison, R. F., Lovec, R. M., Woods, B. A., & Vickers, Jr., R. R. (1995). *Assessment of Potential for Leadership Phase I: Development of the Measures Development of the Measures* (NPRDC-TN-95-11). San Diego: Navy Personnel Research and Development Center.

Rafacz, B. A. (1995). *Computerized Adaptive Testing Version of the Armed Services Vocational Aptitude Battery (CAT-ASVAB): Computer System Development* (NPRDC-TN-95-8). San Diego: Navy Personnel Research and Development Center. (AD-A299 806)

Schmidt, F. L., Hunter, J. E., & Dunn, W. L. (1995). Potential Utility Increases From Adding New Tests to the Armed Services Vocational Aptitude Battery (ASVAB) (NPRDC-TN-95-5). San Diego: Navy Personnel Research and Development Center. (AD-A297 580)

Trejo, L. J., Mullane, M., & Stewart, J. (1995). *Event-Related Potentials and Electroencephalograms in Adaptive Operator Training: Rationale and Annotated Bibliography* (NPRDC-TN-95-3). San Diego: Navy Personnel Research and Development Center. (AD-A294 337)

Trent, T., & Devlin, S. E. (1995) *Compensatory Screening Model for B Cell Enlistment* (NPRDC-TN-95-10). San Diego: Navy Personnel Research and Development Center. (AD-A300 198)

## **Administrative Publications**

*Bibliography of Reports, Journal Articles, Books, and Book Chapters Approved for Public Release: FY94* (NPRDC-AP-95-1). San Diego: Navy Personnel Research and Development Center.

*Command History: Calendar Year 1994* (NPRDC-AP-95-2). San Diego: Navy Personnel Research and Development Center. (AD-A299 513)

## **Journal Articles**

Edwards, J. E., Rosenfeld, P., Thomas, M. D., Thomas, P. J., & Newell, C. E. (1995). Diversity Research in the United States Navy: An Update. *International Journal of Intercultural Relations*, 18(4), 521-538.

Federico, P-A. (1995). Expert and Novice Recognition of Similar Situations. *Human Factors*, 37(1), 105-122.

Hetter, R. D., Segall, D. O., & Bloxom, B. M. (1994). A Comparison of Item Calibration Media in Computerized Adaptive Testing. *Applied Psychological Measurement*, 18(3), 197-204.

Larson, G. E., & Wolfe, J. H. (1995). Validity Results for g From an Expanded Test Base. *Intelligence*, 20, 15-25.

Newell, C. E., Rosenfeld, P., & Culbertson, A. L. (1995). Sexual Harassment Experiences and Equal Opportunity Perceptions of Navy Women. *Sex Roles*, 32(3/4), 159-168.

Sadler, G. C., & Thomas, P. J. (1995). Rock the Cradle, Rock the Boat? *Naval Institute Proceedings*, 121(4/1), 51-56.

Semb, G. B., & Ellis, J. A. (1994). Knowledge Taught in School: What Is Remembered? *Review of Educational Research*, 64(2), 253-286.

Semb, G. B., Ellis, J. A., Fitch, M. A., Parchman, S., & Irick, C. (1995). On-the-Job Training: Prescriptions and Practice. *Performance Improvement Quarterly*, 8(3), 19-37.

Tatum, B. C., & Nebeker, D. M. (1995). Effects of System Control and Feedback Variability on Job Performance and Affective Reactions. *Human Performance*, 8(4), 297-325.

## **Presentation**

Booth-Kewley, S., & Larson, G. E. (1995, August). *Cognitive abilities and synthetic work performance*. Paper presented at the American Psychological Association Convention. New York, NY.

## **Distribution List**

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Chief of Naval Personnel (PERS-00), (PERS-00B)  
Special Assistant for Research Management (PERS-00H)  
Chief of Naval Operations (Historian)  
Defense Technical Information Center (DTIC) (4)